

Update on the DOE LED Lighting Facts[®] Program

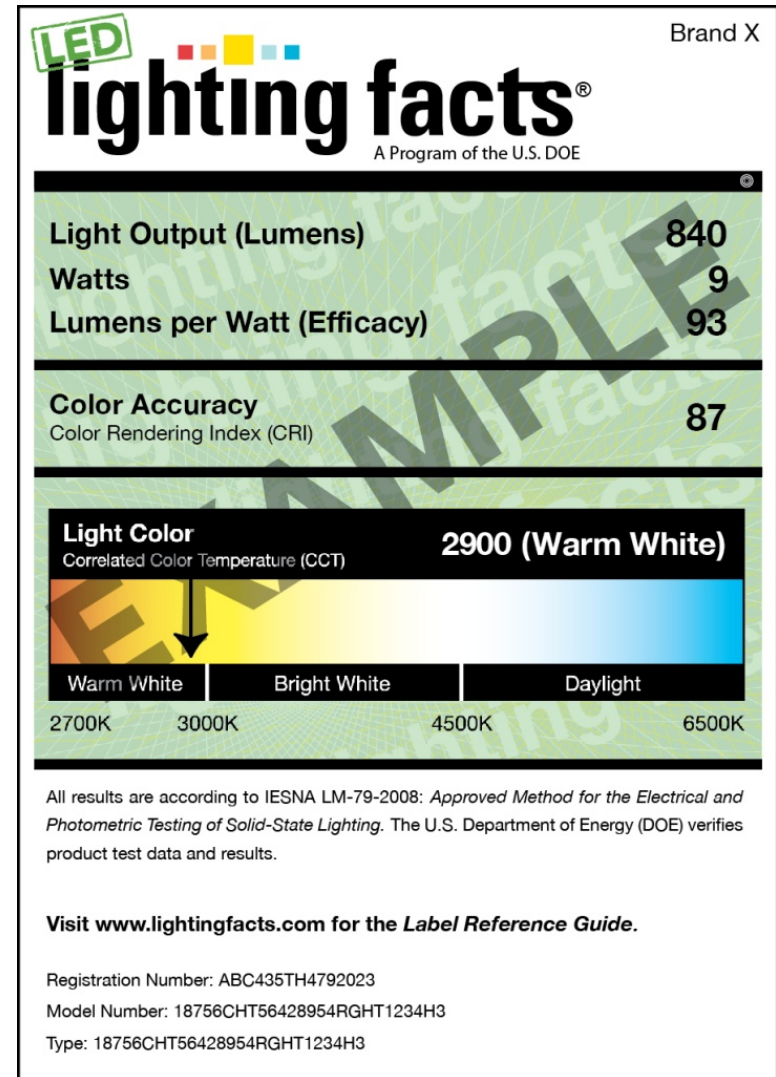


D&R International

- What is LED Lighting Facts?
 - The label
 - The web site
 - The partners
- Product listing and evaluation with LED Lighting Facts
- Recent additions
 - LED lumen maintenance
 - Warranty
 - Dimming Information
- Quality Assurance Program
- How to become a partner

Performance Label for SSL

- Web-based product performance reporting initiative
 - www.lightingfacts.com
- Standardized summary of verifiable product performance data, measured by industry standards
- Industry tool to help buyers
 - Resource to evaluate reported product performance against manufacturer claims
- Label and product list backed by verification of performance testing
- A voluntary and free program

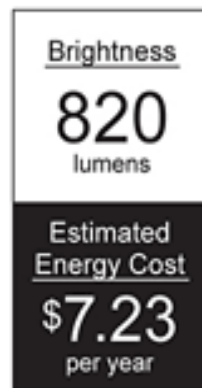


FTC Consumer Label and DOE LED Lighting Facts

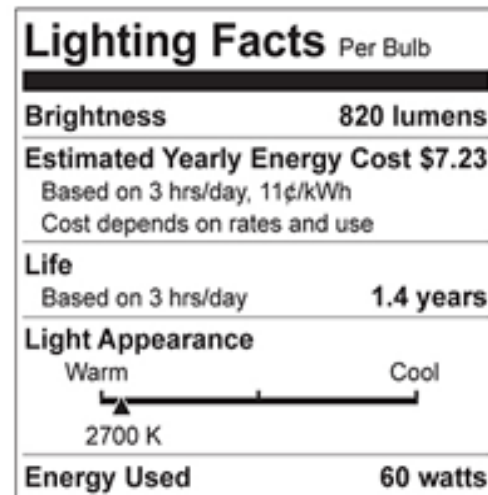
- FTC Labels for Light Bulb Packaging
 - Information on lightingfacts.com
 - Consumer label for medium screw base bulbs
 - All lighting technologies
(incandescent, halogen, CFL, LED)

FTC Lighting Facts label Required January 2012

- **FTC label**
 - Consumer label
 - Medium screw base bulbs
 - All lighting technologies
 - Manufacturer-reported performance



Front



Back

- **DOE LED Lighting Facts**
 - Buyer's tool
 - Only SSL lamps and luminaires
 - Performance verified against test results
 - Not allowed on lamp packaging starting in July 2011

- Partners register through the web site and gain access to their own account
- All product submission and review is done through the web site
- Program policies & procedures, resources, and product information online
- Searchable list of products and performance data

Lighting Facts® Products Search Tool

Show only fixture type:

Light Output between and lm

Watts between and W

Lumens per Watt between and lm/W

Color Accuracy (CRI) between and (CRI)

Light Color (CCT) between and K

55
Products Match Your Criteria

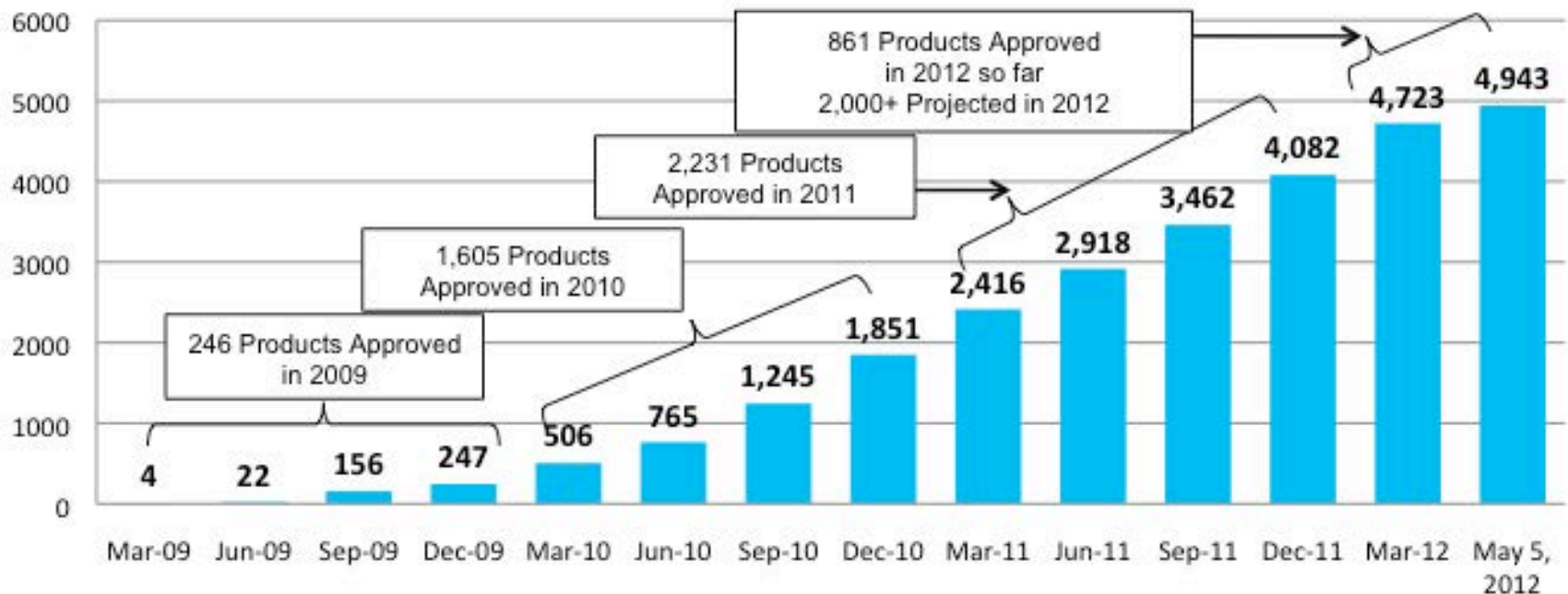
Search Within Your Criteria:

Search Results: 55 Show results per page

Organization	Brand	Fixture Type	Model Number
io Lighting Qualifications: <input type="text"/>	io radii 38	Surface-mounted downlight	0.07.38HO.3K.10
Performance Specs: <input type="text" value="2010"/> lm <input type="text" value="43.3"/> w <input type="text" value="46.1"/> <input type="text" value="84"/> rCRn <input type="text" value="3095"/> K			
Kason Industries, Inc. Qualifications: <input type="text"/>	Kason LED Vaporproof 4ft Fixture	Surface-mounted downlight	11810L21248LB
Performance Specs: <input type="text" value="2158"/> lm <input type="text" value="37.36"/> w <input type="text" value="57.8"/> <input type="text" value="68"/> rCRn <input type="text" value="5542"/> K			
Sea Gull Lighting Products, LLC Qualifications: <input type="text"/>	Sea Gull Lighting Products	Surface-mounted downlight	14600S-15
Performance Specs: <input type="text" value="817"/> lm <input type="text" value="14.25"/> w <input type="text" value="57.3"/> <input type="text" value="80"/> rCRn <input type="text" value="3000"/> K			
Adesso Inc. Qualifications: <input type="text"/>	Adesso Inc.	Surface-mounted downlight	3173-01
Performance Specs: <input type="text" value="180"/> lm <input type="text" value="7"/> w <input type="text" value="26"/> lm/W <input type="text" value="72"/> rCRn <input type="text" value="2800"/> K			
Adesso Inc. Qualifications: <input type="text"/>	Adesso Inc.	Surface-mounted downlight	3173-22
Performance Specs: <input type="text" value="180"/> lm <input type="text" value="7"/> w <input type="text" value="26"/> lm/W <input type="text" value="72"/> rCRn <input type="text" value="2800"/> K			
BELAIR LIGHTING, INC. Qualifications: <input type="text"/>	Portfolio	Surface-mounted downlight	58610PC
Performance Specs: <input type="text" value="151"/> lm <input type="text" value="7.09"/> w <input type="text" value="21.28"/> <input type="text" value="83"/> rCRn <input type="text" value="3054"/> K			

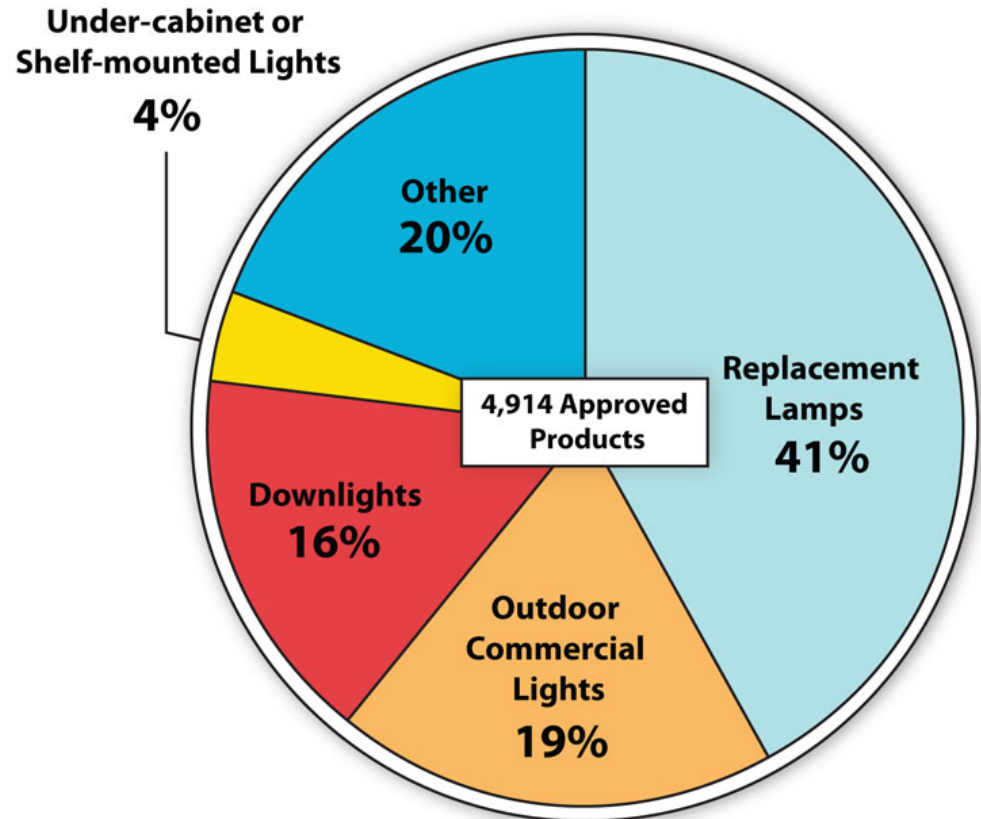
- Product list continues to grow
 - More stakeholders getting involved
 - Greater responsibility to ensure trust in LED Lighting Facts and the SSL industry

LED Lighting Facts
Registered Products by Quarter
March 2009 - May 2012



- 363 manufacturers have registered products
- Growing list of buyers ask for label
 - 249 retailers
 - 231 lighting designers
 - 66 energy efficiency programs
- 5,000 products listed
 - Listings show performance values

Product Type Distribution



As of 3/1/2012

- LM-79 results are submitted via online account
- Performance claims entered in submittal form
- LED Lighting Facts Product Verification Team verifies claims against LM-79 results
- Performance claims must be within allowable tolerances.
 - Listed in [Partner Participation Manual](#)
- Optional Metrics
 - Power factor, input voltage, power type (AC or DC), zonal lumen densities
 - Claims must equal measured values
 - Do not appear on the label
 - Very important for buyers' and utilities' product evaluations
 - Specify which optional data to test for
 - Report as much as possible

The Standard Label

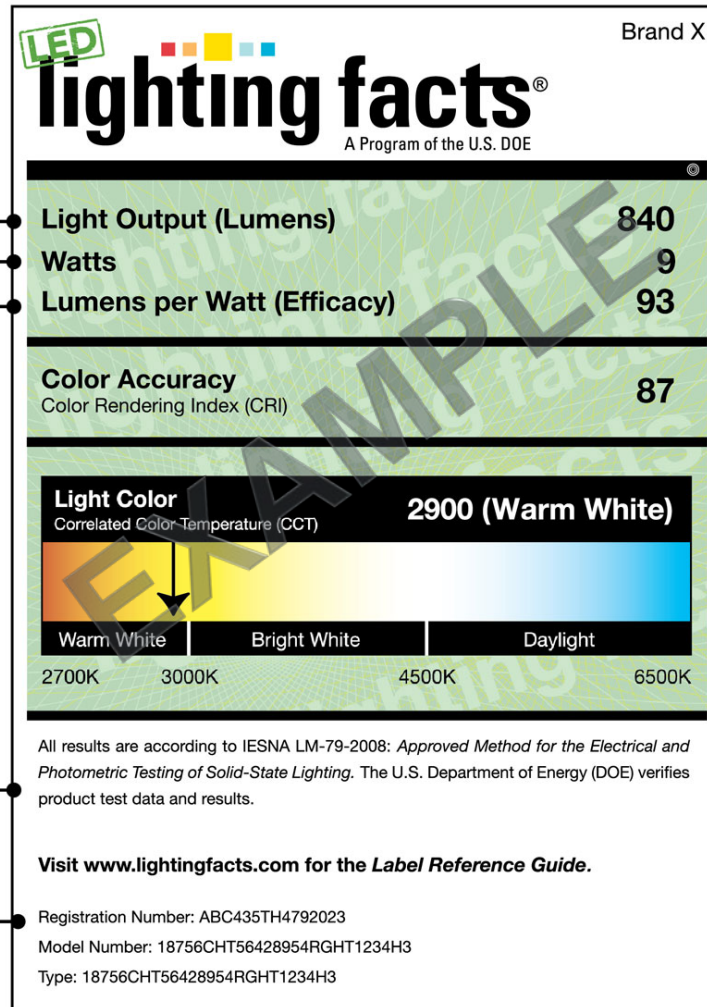
Light Output/Lumens
Measures light output. The higher the number, the more light is emitted.
Reported as "Total Integrated Flux (Lumens)" on LM-79 test report.

Watts
Measures energy required to light the product. The lower the wattage, the less energy used.
Reported as "Input Power (Watts)" on LM-79 report.

Lumens per Watt/Efficacy
Measures efficiency. The higher the number, the more efficient the product.
Reported as "Efficacy" on LM-79 test report.

IESNA LM-79-2008
Industry standardized test procedure that measures performance qualities of LED luminaires and integral lamps. It allows for a true comparison of luminaires regardless of the light source.

Registration Number
Model Number
Type



Brand

Color Rendering Index (CRI)
Measures color accuracy.

Color rendition is the effect of the lamp's light spectrum on the color appearance of objects.

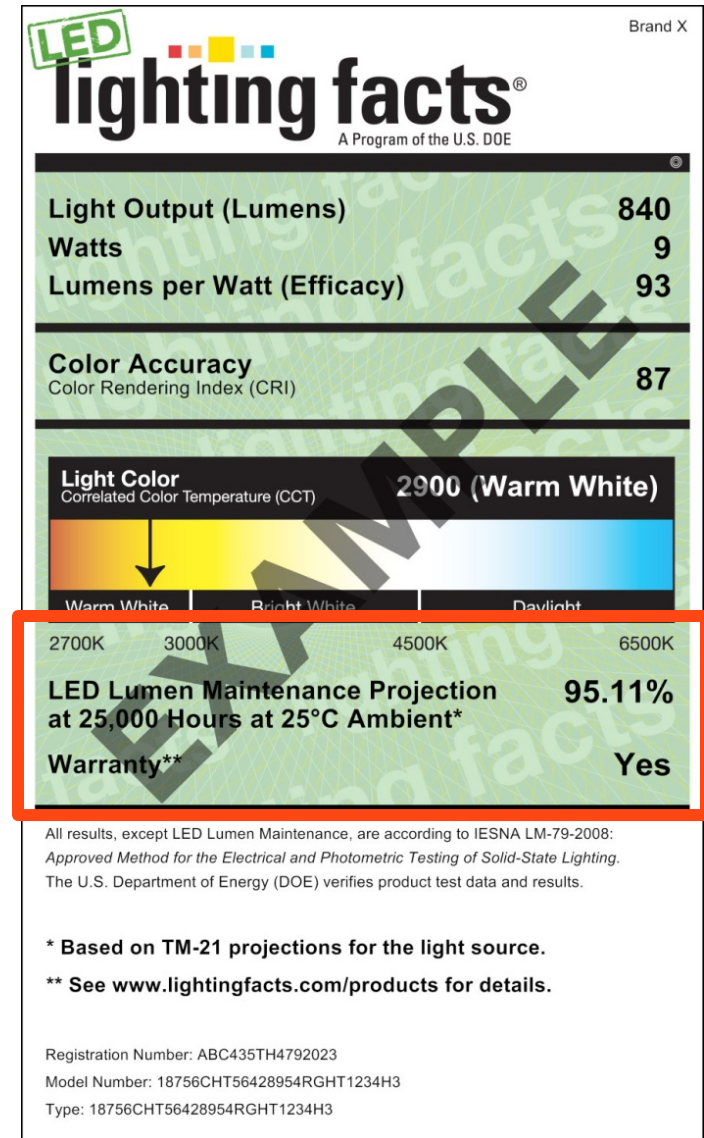
Correlated Color Temperature (CCT)
Measures light color.

"Cool" colors have higher Kelvin temperatures (3600–5500 K); "warm" colors have lower color temperatures (2700–3500 K). Color temperatures higher than 6500 are outside of the defined region for white light, but may be appropriate for outdoor applications.

- Resources on Lightingfacts.com
 - Performance Scales & Product Snapshot
- Online verified product list
 - Search performance criteria for specific application
 - View results or download to Excel
- Product Performance Screening
 - Energy Efficiency Sponsors use product list to screen eligible products
 - Customized LM-79 performance criteria
 - Some criteria go beyond LED Lighting Facts required metrics
 - Report optional metrics to increase product visibility
 - LED lumen maintenance, warranty, input voltage, zonal lumen density data, beam angle, center beam candlepower, and more

New Optional Metrics Label

- LED lumen maintenance percentage
 - Listed as percentage of initial light output at 25,000 hours.
 - Not a measure of *lifetime* (no standardized test procedure yet).
 - Based on TM-21 projections, a standardized methodology for projecting lumen maintenance beyond the LM-80 test period.
- Warranty
 - Partners have the option of listing “yes” if a warranty is available.
 - Specifics are not stated
 - Manufacturers provide web page where warranty is located
 - URL shown in product list



- Optional Dimming Information
 - Displayed in standard format on manufacturer's web site
 - Contains dimmer/lamp/luminaire compatibility and capability
 - URL shown in product list

Dimmer Make	Dimmer Series - Model	Dimmer Trim Requirements	Transformer Make (low voltage lamps)	Transformer Model (low voltage lamps)	LED Lamp or Luminaire Series - Model	Dimming Range, max-min (% lumens)	Minimum Lamps or Luminaires (per circuit)	Maximum Lamps or Luminaires (per circuit)	Additional Comments
"Dimmer Make 1"	"Dimmer Series A" - "Dimmer Model #"	Low End	N/A	N/A	"PAR38 Series" - "PAR38ABC123"	99% - 0%	1	6	
					"PAR38 Series" - "PAR38XYZ456"				
					"PAR38 Series" - "PAR38EFG789"				
"Dimmer Make 2"	"Dimmer Series A" - "Dimmer Model #"	N/A	"Transformer Make 1"	"Transformer Model #"	"Brand Y MR16s" - "MR16ABC123"	100% - 5%	1	40	
"Dimmer Make 2"	"Dimmer Series B" - "Dimmer Model #"	N/A	"Transformer Make 1"	"Transformer Model #"	"Brand Y MR16s" - "MR16ABC123"	100% - 5%	1 "MR16ABC123"	3 "MR16ABC123"	
					"Brand Y MR16s" - "MR16XYZ456"		+ 1 "MR16XYZ456"	+ 10 "MR16XYZ456"	

- Product Availability Information
 - Important to buyers to know if a product is market ready
 - Product list will show if a product is stocked in stores, available by special order, or not yet available.

- Laboratories can now partner with LED Lighting Facts
- Testing Laboratory Partners can promote services to manufacturers from the LED Lighting Facts Approved Testing Laboratories list
- Beginning June 1, LED Lighting Facts will only accept test reports from Testing Laboratory Partners on the Approved Testing Laboratories list



- DOE actively monitors proper use
 - LED Lighting Facts label is a registered trademark of U.S. DOE
 - Only approved products may use the label provided by DOE
 - No alterations
 - Partners participate in reporting violations
 - Send product information to info@lightingfacts.com
- Quality Assurance Program
 - Test listed products by industry standard methods
 - Ensure products perform as stated on label
 - Results indicated in product list – 2011 results shown now
 - Policies and procedures published online

- Products procured through normal market channels
- Multiple samples from multiple locations tested when possible
- Products performing outside allowable tolerances have opportunity to change claims or appeal
- Online product list indicate tested products and results
- 2011 was first year of the program
- More products will be tested in 2012 and beyond

Search products: [Show Advanced Search](#)

Organization	Brand	Type	Model Number	Labeled Product Performance Verification Status
A Lighting Manufacturer	Lighting Manufacturer LEDs	Canopy light	LED Canopy ADF153	
A Lighting Manufacturer	Lighting Manufacturer LEDs	Portable Desk Lamp	LED Desk UFY937	

QA performance verified or revised

QA performance did not meet original claims; claims were not revised

- 24 products have been evaluated
 - 21 replacement lamps
 - 6 A-lamps
 - 13 directional lamps (PAR or MR)
 - 2 decorative lamps
 - 3 luminaires
 - 2 recessed downlights
 - 1 portable desk lamp
- 20 of 24 performed within allowable tolerances of original claims
 - 2 products were revised to align with the QA test results
 - 2 products were not revised by the manufacturer.
- Visit the LED Lighting Facts Product List to see the results.

- Benefits:
 - Periodic Newsletters
 - Keep up-to-date with program and industry information
 - Online resources on industry changes
 - FTC labeling, new test procedures
 - Product Snapshots, Performance Scales
- How to Join:
 1. Visit www.lightingfacts.com
 - Review conditions of participation in the updated Partner Participation Manual
 2. Register for the program and take the pledge
 3. Test products at an Approved Testing Laboratory
 4. Submit a product for the label or begin evaluating listed products

Thank you!

Questions? Please contact:

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